

**SEMESTRAL ASSESSMENT 1**

**PRIMARY 4  
SCIENCE  
(BOOKLET A)**

13 MAY 2016

Name: \_\_\_\_\_ (     )

Class: Teamwork \_\_\_\_\_

Total time for Booklets A and B: 1 h 30 min

**INSTRUCTIONS TO CANDIDATES**

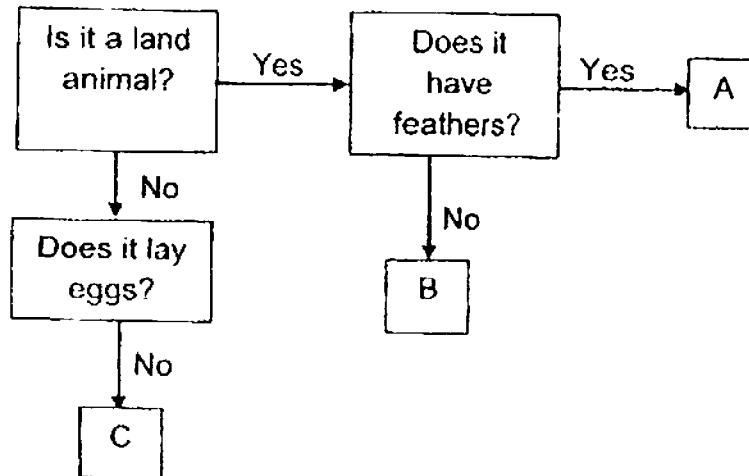
1. Write your Name, Class and Register No. in the spaces provided above.
2. DO NOT turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (QAS) provided.

**This booklet consists of 14 printed pages, excluding the cover page.**

For each question, from 1 to 22, four options are given. One of them is correct.  
Make your choice and shade the oval (1, 2, 3, or 4) on the Optical Answer Sheet.

[ 44 Marks ]

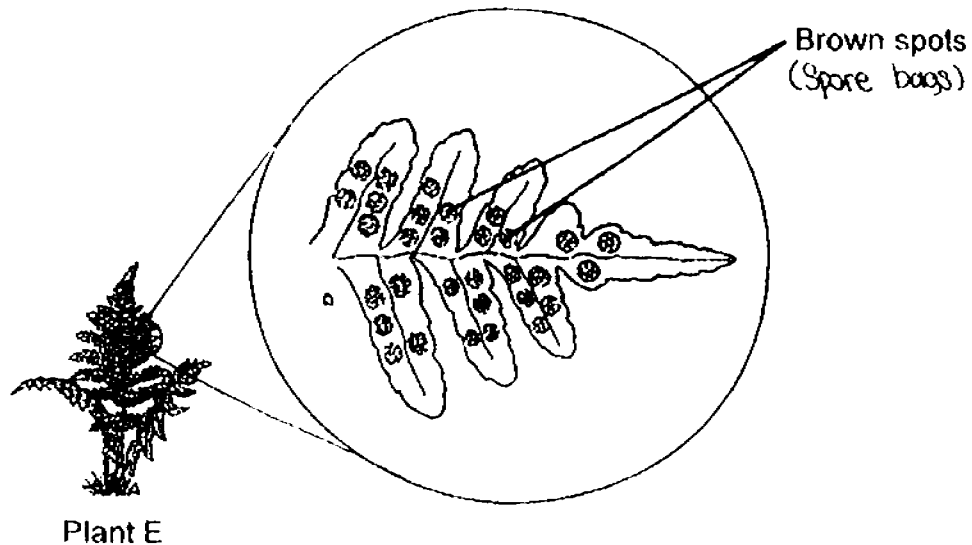
1 Study the flowchart on animals carefully.



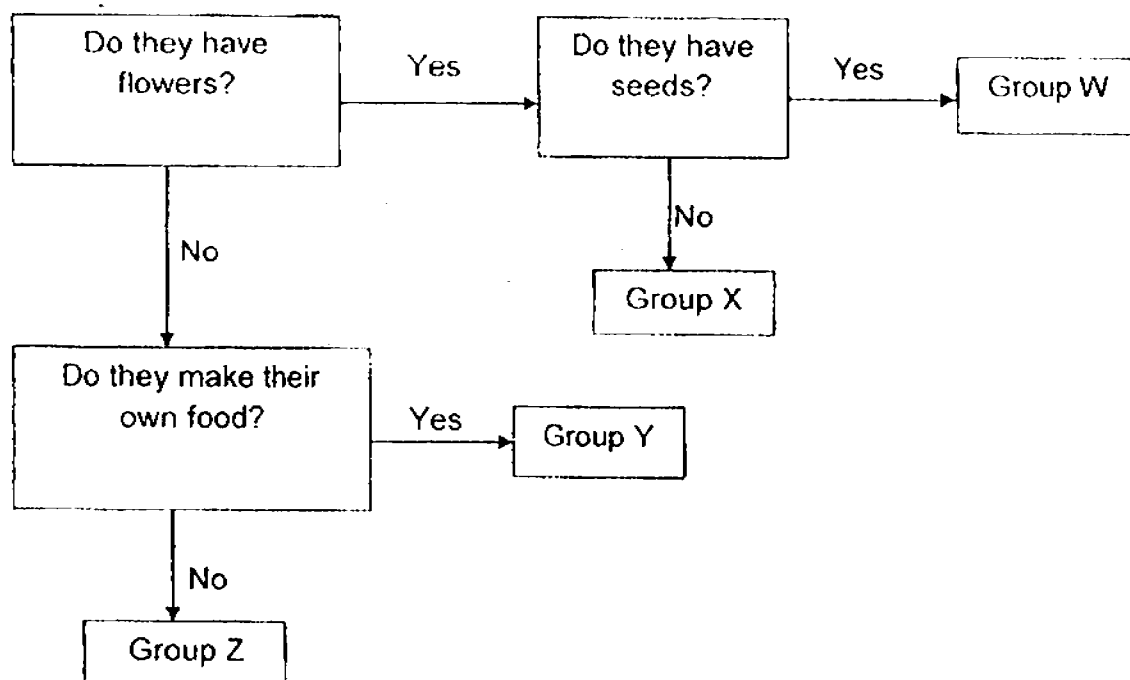
Which of the following animals could A, B and C be?

|     | A       | B       | C       |
|-----|---------|---------|---------|
| (1) | Chicken | Monkey  | Guppy   |
| (2) | Chicken | Guppy   | Monkey  |
| (3) | Guppy   | Monkey  | Chicken |
| (4) | Guppy   | Chicken | Monkey  |

- 2 Mary visited the garden and observed that Plant E has some brown spots on the underside of the leaves.



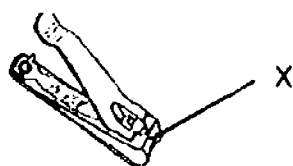
Mary used the following flowchart to classify Plant E.



Which of the following groups (W, X, Y or Z) can Plant E be placed in?

- (1) Group W
- (2) Group X
- (3) Group Y
- (4) Group Z

- 3 The diagram below shows a nail clipper.



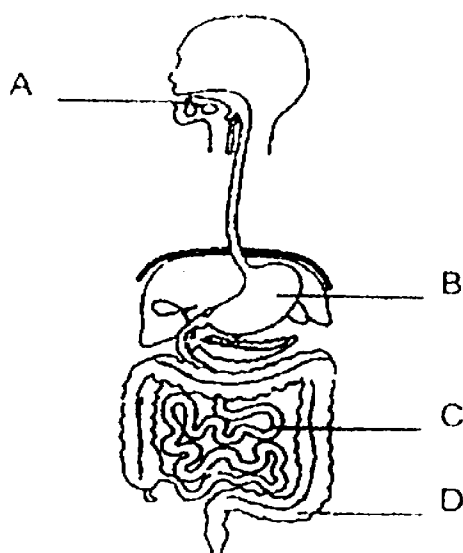
Nail Clipper

Jane uses this nail clipper to cut her nails.

This part marked X should be made of \_\_\_\_\_.

- (1) steel
- (2) glass
- (3) wood
- (4) paper

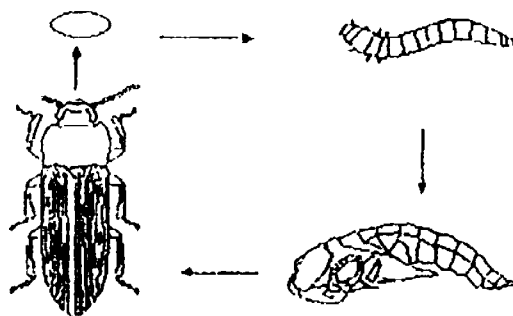
- 4 The diagram below shows a human digestive system with some organs labelled A, B, C and D.



Which organs in the digestive system produce digestive juices?

- (1) A and B only
- (2) A and D only
- (3) A, B and C only
- (4) A, B, C and D

5 Look at the life cycle of the beetle shown below.



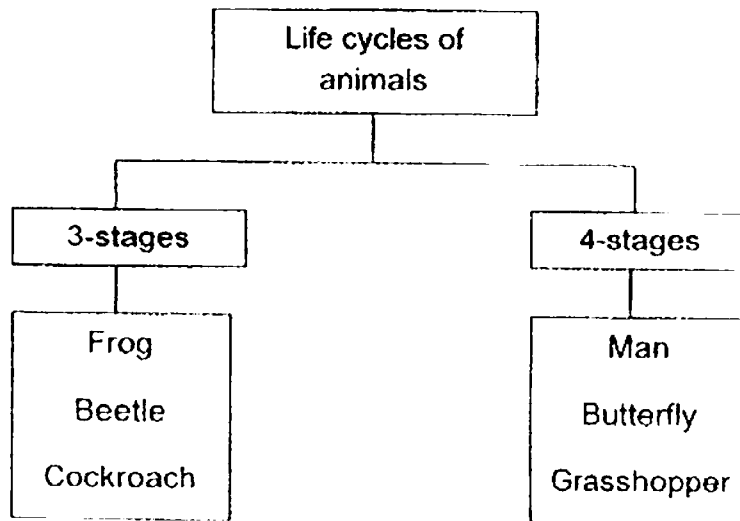
Which of the following animal has the same number of stages as the beetle?

- (1) Frog
- (2) Butterfly
- (3) Chicken
- (4) Cockroach

6 The number of stages in the life cycle of birds such as chicken is \_\_\_\_\_.

- (1) 5
- (2) 2
- (3) 3
- (4) 4

- 7 In the classification chart below, the animals are grouped according to the number of stages in their life cycles.

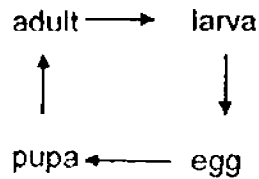


Which animals are not classified correctly?

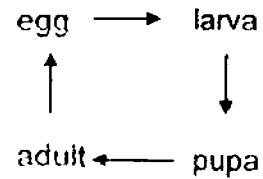
- (1) Man and Beetle only
- (2) Cockroach and Butterfly only
- (3) Beetle, Man and Cockroach only
- (4) Man, Beetle and Grasshopper only

- 8 Which of the following shows the correct order of the stages in the life cycle of butterfly?

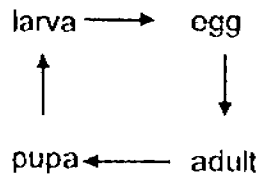
(1)



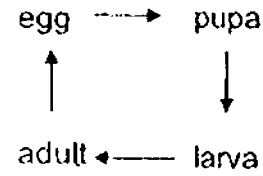
(2)



(3)



(4)



- 9 Which of the following is true when a seed germinates?

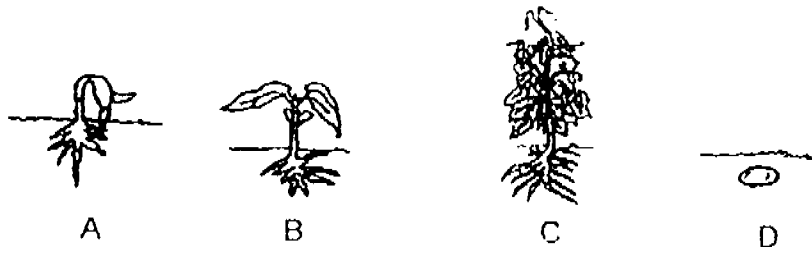
- (1) The root appears first.
- (2) The shoot appears first.
- (3) The first leaves appear first.
- (4) The shoot and the first leaves appear first.

- 10 Both young and adult flowering plants\_\_\_\_\_.

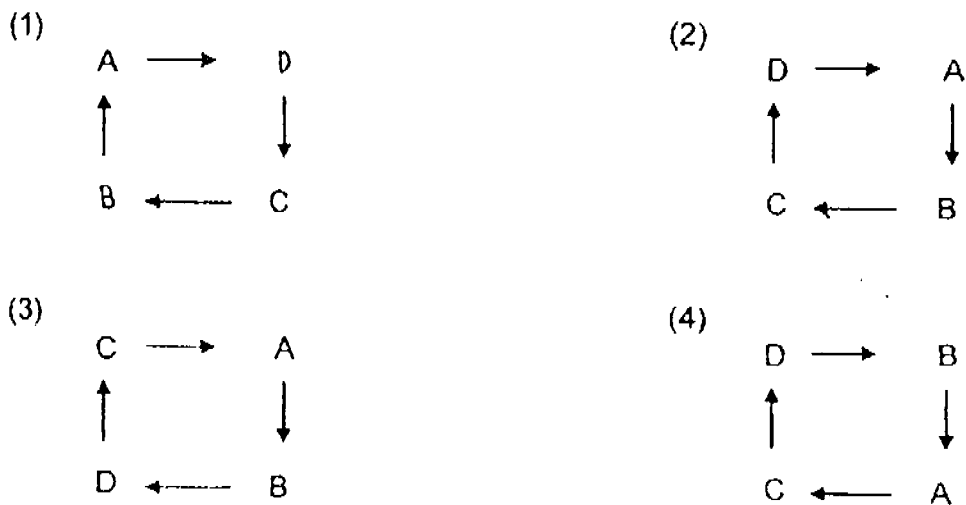
- A produce seeds X
- B produce flowers X
- C make their own food ✓
- D take in water through their roots ✓

- (1) A and B
- (2) A and C
- (3) B and D
- (4) C and D

11 The diagrams below show different stages in the life cycle of a plant.

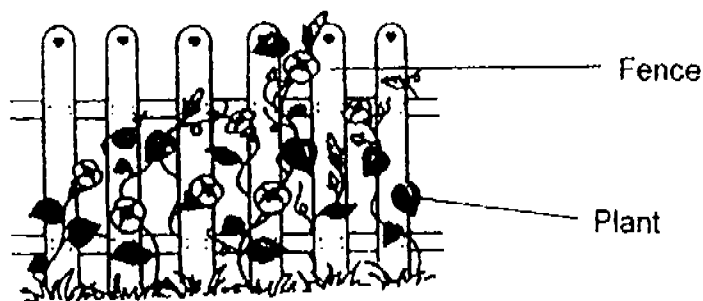


Which of the following shows the correct order of the life cycle of a plant?



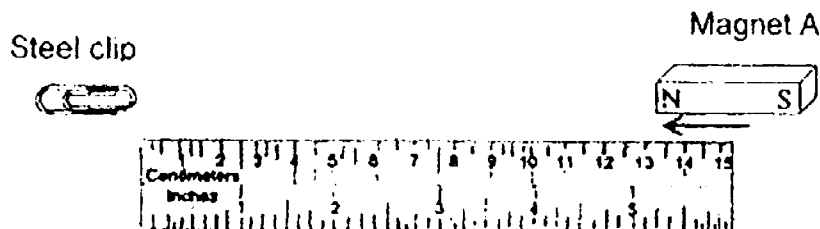
12 Ali observed some plants growing on the fence in the garden.

These plants grow on the fence to \_\_\_\_\_.

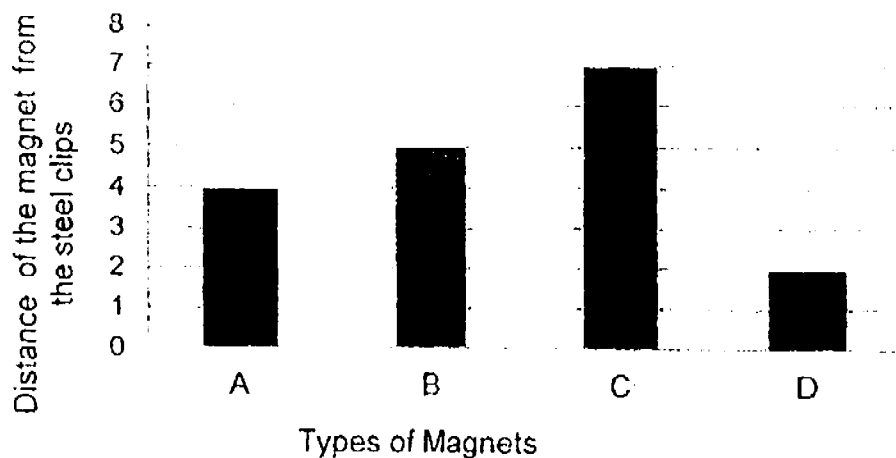


- (1) produce spores for reproduction
- (2) take in water from the roots to survive
- (3) bear fruits and seeds for reproduction
- (4) gain support to allow the plants to get enough sunlight

- 13 John wanted to find the maximum distance at which magnet A is from steel clip before the clip gets attracted to magnet A. He placed magnet A and steel clip along the ruler as shown below.



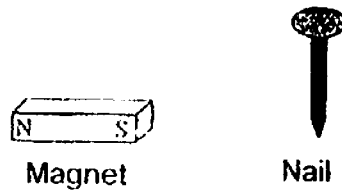
He moved magnet A along the ruler towards the steel clip. He recorded the reading on the distance at which the steel clip was attracted to magnet A. He repeated the experiment using 3 other magnets B, C and D and presented his result in a graph shown below.



Based on the graph, which magnet has the strongest magnetic pull?

- (1) A
- (2) B
- (3) C
- (4) D

- 14 Stella wants to make a temporary magnet using a bar magnet and nail.



Which of the following steps is correct?

Stroke the nail with the \_\_\_\_\_.

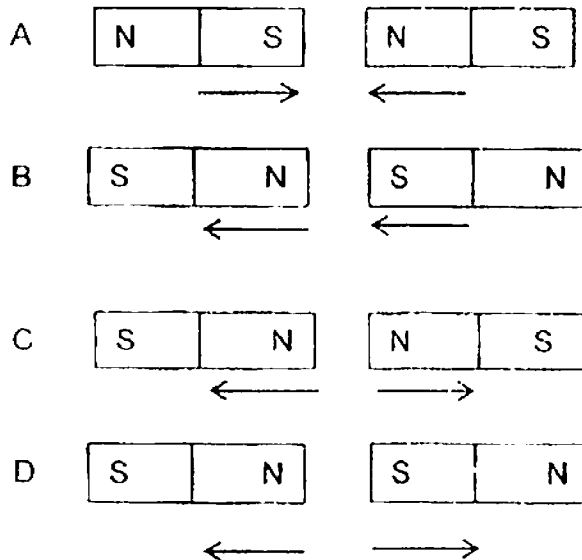
- (1) North pole of the magnet many times in one direction.
- (2) South pole of the magnet many times in both directions.
- (3) North pole and South pole of the magnet many times in one direction.
- (4) North pole and South pole of the magnet many times in both directions.

- 15 Which two of the following statements about magnets are true?

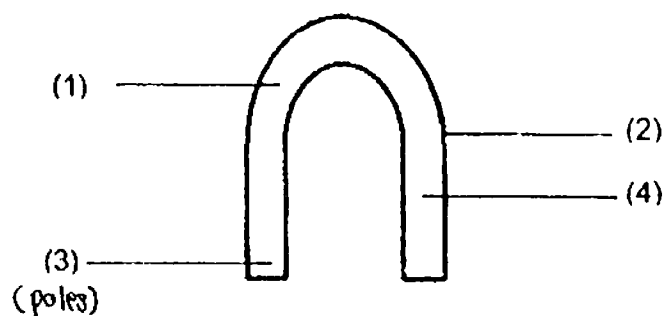
- A Unlike poles repel each other.
- B The pull of a magnet is weakest at its poles.
- C Magnetic materials will be attracted to magnets.
- D The two poles of a magnet are known as North-seeking and South-seeking poles.

- (1) A and B
- (2) A and D
- (3) B and C
- (4) C and D

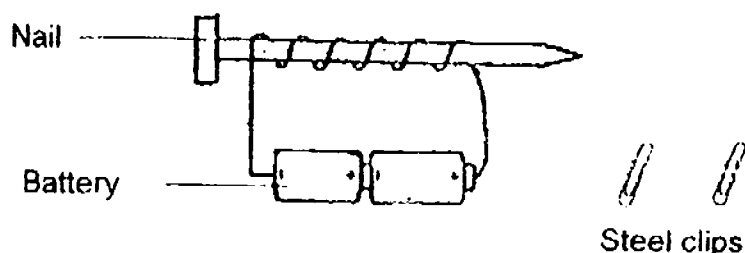
- 16 Which two diagrams below show the possible interaction between two bar magnets when they are brought close to each other? (The arrows show the direction of movement between the two bar magnets.)



- (1) A and C  
 (2) A and D  
 (3) B and C  
 (4) B and D
- 17 Kent put a U shaped magnet into a tray of metal pins. When he removed the magnet from the tray of metal pins, which part of the magnet (1, 2, 3 or 4) will attract the most metal pins?



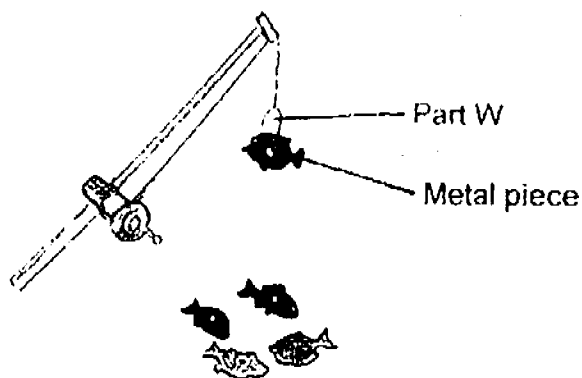
- 18 James set up an electromagnet using a nail, a coil of wire and two batteries as shown below.



He observed that the electromagnet did not attract any steel clips that were brought near to it.

Which of the following explanation is correct?

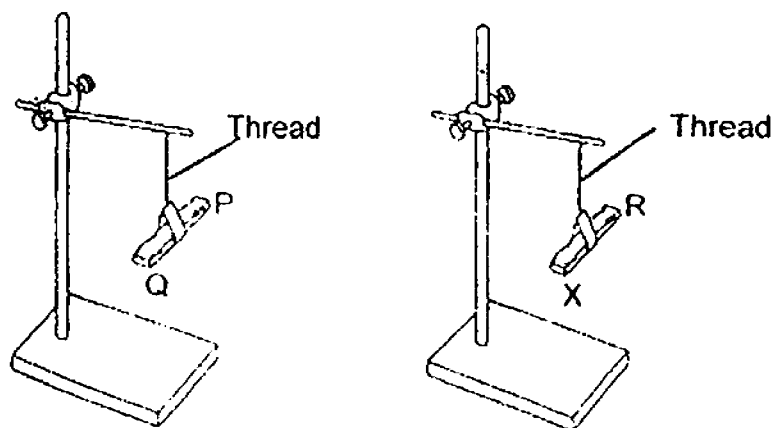
- (1) Too many batteries were used.
  - (2) Iron clips were used instead of steel clips.
  - (3) The nail used was a non-magnetic material.
  - (4) The number of coils around the nail was too many.
- 19 Kenneth made a magnetic fishing rod using an electromagnet at Part W. When he switched on the electromagnet, he was able to attract the metal pieces on the fish. However, when he switched off the electromagnet, he could not release the fish.



What could be the possible reason?

- (1) The electromagnet at Part W was not strong enough.
- (2) He had used a permanent magnet to make the electromagnet.
- (3) The metal pieces on the fish were all made of magnetic material.
- (4) The electromagnet was no longer a magnet when it was switched off.

20 Study the two set ups carefully.

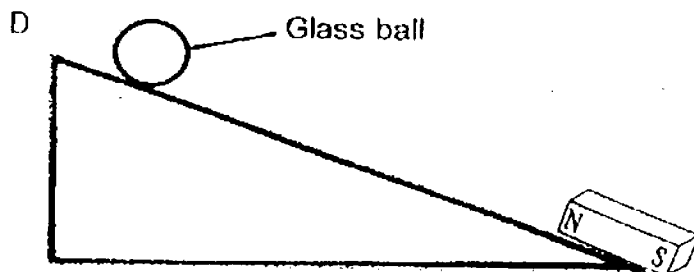
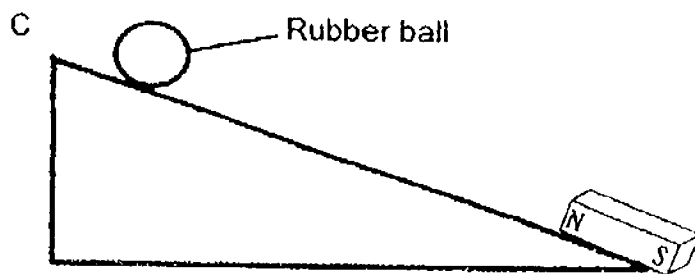
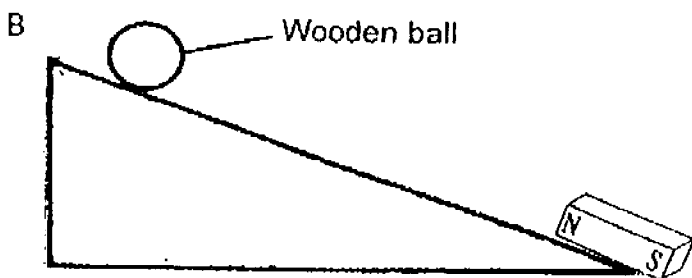
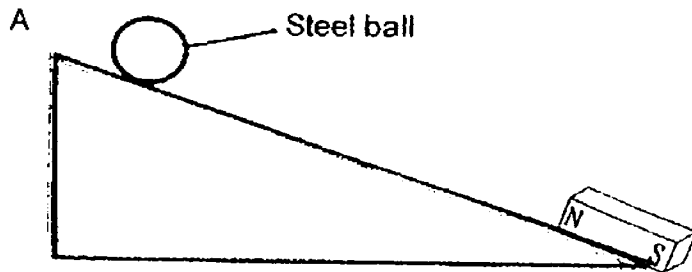


P, Q, R and X are the poles of the two suspended magnets. Both magnets rested in North-South direction as shown above.

Which of the following statement is correct if the magnets were brought together?

- (1) Pole Q and Pole R will repel.
- (2) Pole Q and Pole X will attract.
- (3) Pole P and Pole R will attract.
- (4) Pole P and Pole X will attract.

- 21 John set up an experiment using 4 similar 10-gram balls made of different materials, a ramp of the same surface and a bar magnet as shown below. The balls are released the same time.

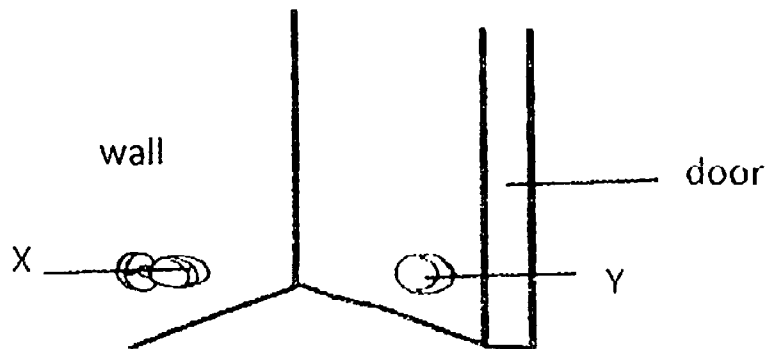


Which ball will most likely roll down the ramp the fastest?

- (1) Steel ball
- (2) Glass ball
- (3) Rubber ball
- (4) Wooden ball

- 22 Ali saw the magnetic door stopper at the back of his door.

The stopper is made of 2 parts, X and Y. He found out that one of the parts have to be a magnet for the stopper to hold the door open.



Based on the information given, which of the following could X and Y be?

|     | X       | Y         |
|-----|---------|-----------|
| (1) | Magnet  | Steel     |
| (2) | Magnet  | Aluminium |
| (3) | Glass   | Magnet    |
| (4) | Plastic | Magnet    |

# SEMESTRAL ASSESSMENT 1

## PRIMARY 4 SCIENCE (BOOKLET B)

13 MAY 2016

Name: \_\_\_\_\_ ( ㊟ )

Class: Teamwork \_\_\_\_\_

|                    |
|--------------------|
|                    |
| Parent's Signature |

Total time for Booklets A and B: 1 h 30 min

### INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Register No. in the spaces provided above.
2. DO NOT turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet.

|                                |    |
|--------------------------------|----|
| Marks (Booklet A) :            | 44 |
| Marks (Booklet B) :            | 36 |
| Total Marks (Booklets A & B) : | 80 |

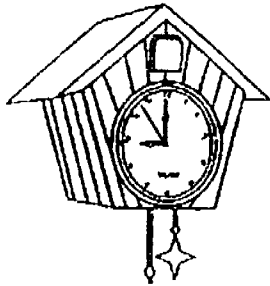
This booklet consists of 12 printed pages, excluding the cover page.

For questions 23 to 33, write your answers in this booklet.

The number of marks available is shown in brackets [ ] at the end of each question or part question.

[36 Marks]

23 John saw two items shown below.



A ticking clock on the wall



A chick in a garden

He told Mary that both items seem to be able to move on their own and so both are living things. Mary disagreed with John.

Based on the characteristics of living and non-living things, give 2 reasons why Mary said so.

[2]

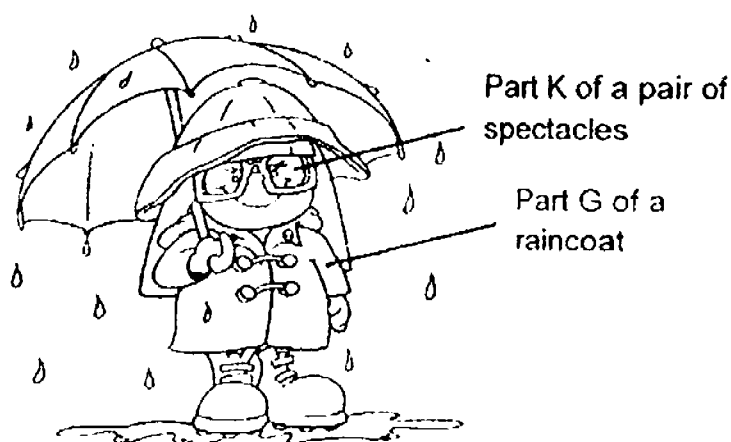
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24. On a rainy day, Su Mei wore her raincoat to go to school.



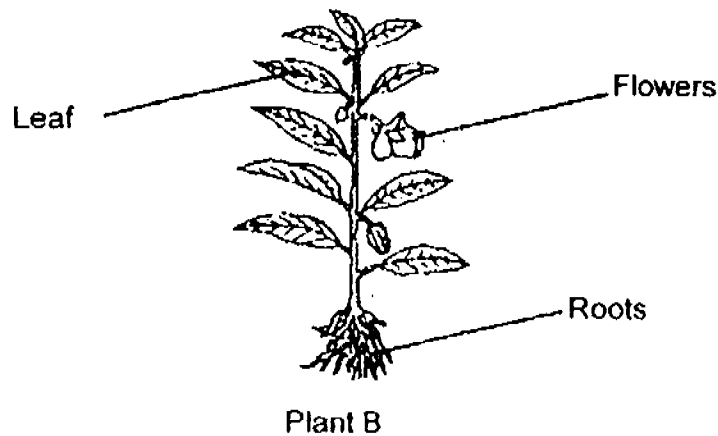
- (a) Suggest 2 properties of the material used to make Part G of the raincoat and explain how these properties make the raincoat suitable for wearing on a rainy day. [2]

|      | Property | Explain how the property makes the raincoat suitable |
|------|----------|------------------------------------------------------|
| (i)  |          |                                                      |
| (ii) |          |                                                      |

- (b) Su Mei was wearing a pair of spectacles.  
Other than the properties stated in (a), state another property of the material used to make Part K of her spectacles. [1]

25 (a) Why do plants reproduce?

The diagram below shows Plant B.



John plucked a leaf from a Plant B and put it under a microscope and saw tiny openings on the leaf as shown below.



(b) What is the function of the tiny openings in the leaf? [1]

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(c) The flowers on Plant B only appeared when the plant is in the adult stage. Describe how the flowers would develop on Plant B that enable the plant to grow into new plants. [2]

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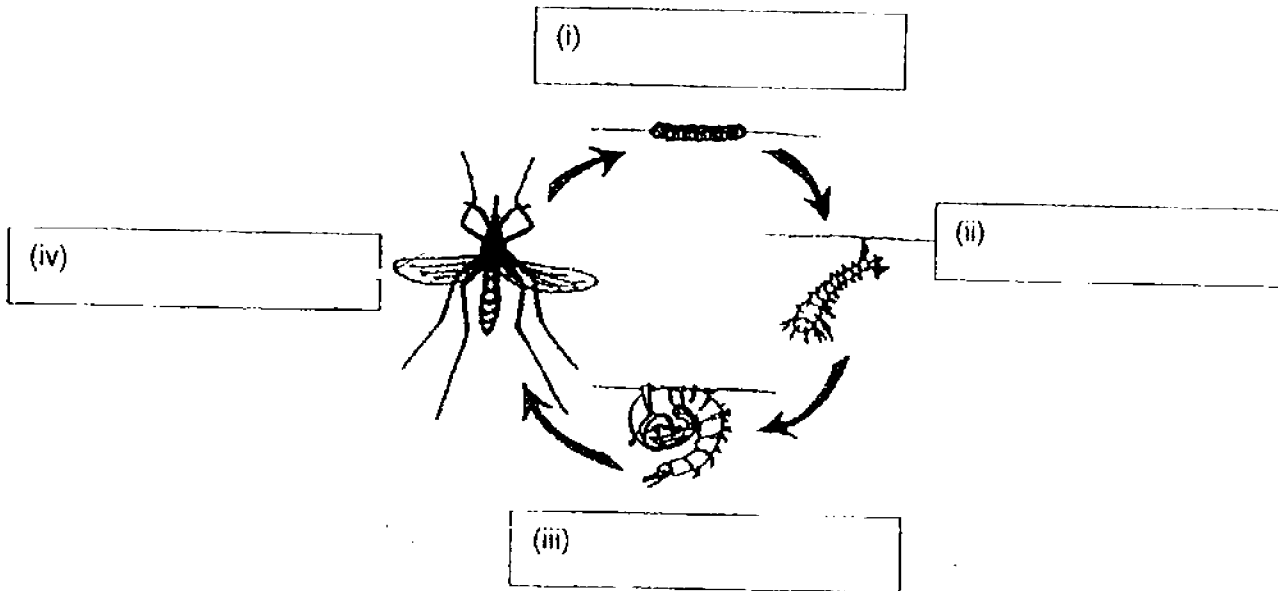


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26 (a) Study the life cycle of the mosquito.

Name the stages clearly in the boxes provided.

[1]



(b) Aedes mosquitoes spread dengue fever. At which stage of its life cycle is it most harmful to Man? Why?

[1]

.....

.....

(c) State two ways to prevent the mosquito from breeding.

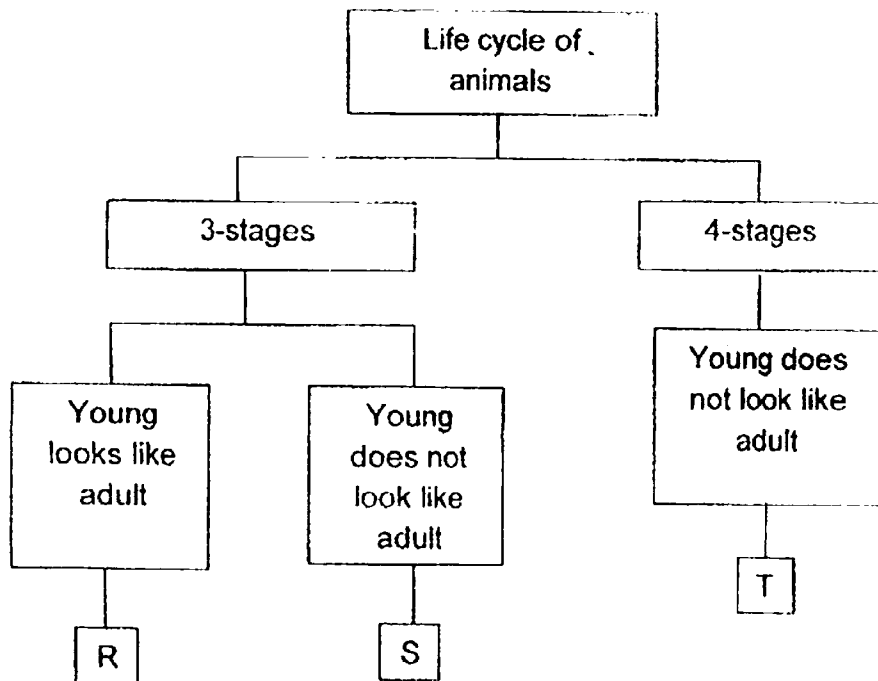
(i) .....

.....

(ii) .....

.....

27 Study the diagram below.



Based on the flowchart above, give an example for each of the following: [3]

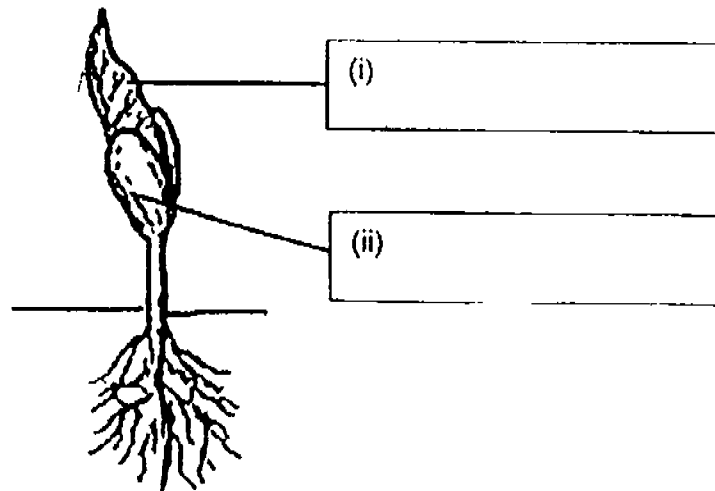
R: \_\_\_\_\_

S: \_\_\_\_\_

T: \_\_\_\_\_

- 28 (a) The diagram below shows a seed developing into a young plant.  
Label the parts in the boxes provided.

[1]

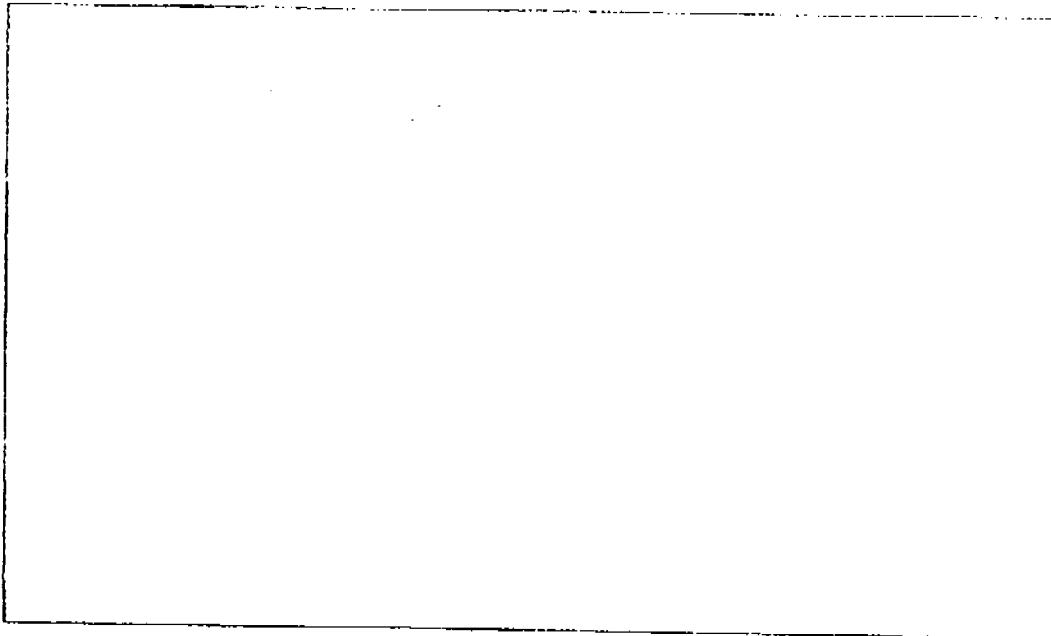


- (b) How does the young plant at this stage in (a) get its food?

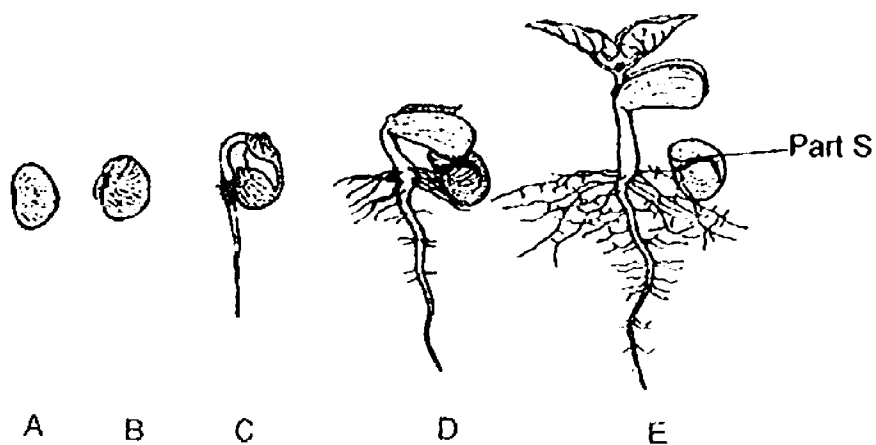
[1]

- (c) Draw the life cycle of a flowering plant in the box provided. (You do not need to draw the plant)

[2]



- 29 The diagram below shows a germination process of a green bean.



- (a) At which stage(s) can the seedling start to make its own food? [1]

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- (b) Explain your answer in (a). [1]

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- (c) (i) Part S drops off during the germination process.  
What is Part S? [1]

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- (ii) State the function of Part S. [1]

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30. Max kept some eggs of Insect G in a container.

Once they hatched, he gave them the same amount of food every day. He observed the growth of Insect G for a few days and recorded the amount of food left in the table below.

| Day | Amount of food at the beginning of the day (g) | Amount of food at the of end the day (g) |
|-----|------------------------------------------------|------------------------------------------|
| 1   | 100                                            | 90                                       |
| 2   | 100                                            | 80                                       |
| 3   | 100                                            | 60                                       |
| 4   | 100                                            | 100                                      |
| 5   | 100                                            | 100                                      |
| 6   | 100                                            | 100                                      |
| 7   | 100                                            | 90                                       |

- (a) He noticed that the amount of food did not change from Day 4 for three days. If the young of Insect G survived, what had happened to the young [1]  
on Day 4?

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- (b) Based on the information given, how many days did it take for Insect G to become an adult after it was hatched? [1]

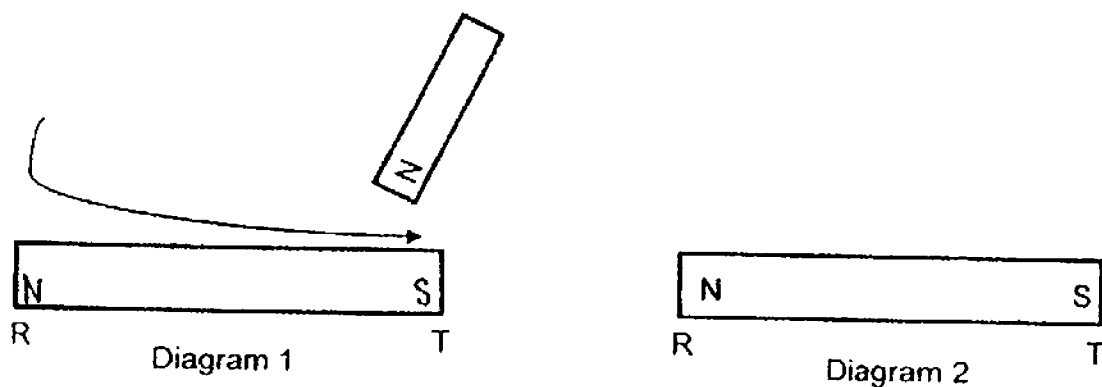
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- (c) Max kept some young of another insect, Insect M, in a container and observed the changes that the young went through until they became adults. He realised that the life cycle of Insect M was different from Insect G.

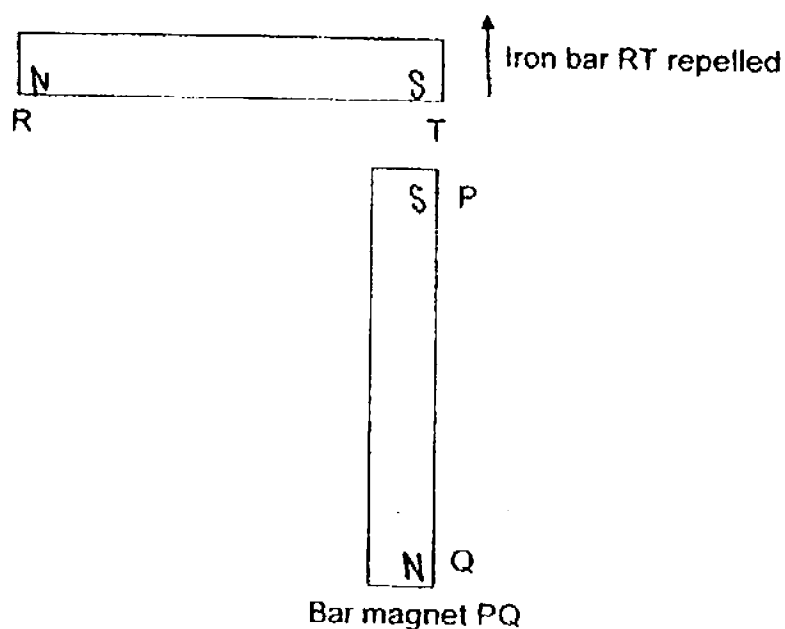
Draw the life cycle of Insect M in the space below.

[1]

- 31 (a) An iron bar RT was made into a temporary magnet using the stroke method shown in Diagram 1. Diagram 2 shows the magnetic poles of the iron bar RT after it was magnetised.



When iron bar RT was brought near another bar magnet PQ, iron bar RT repelled.



Based on the information above, identify the magnetic poles of bar magnet PQ.

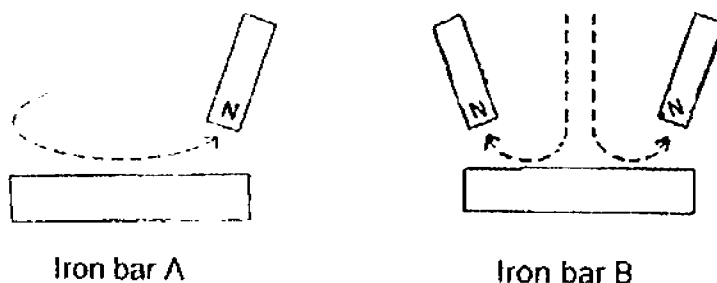
[1]

P: \_\_\_\_\_

Q: \_\_\_\_\_

Question 31 (b) continues on page 24

- (b) Henry used 2 identical iron bars, A and B and stroke it 20 times with similar bar magnets as shown below.



He brought some steel paper clips to both iron bars and found that the steel paper clips only attract to iron bar A. He realised that iron bar B was not magnetised.

Give a reason iron bar B is not magnetised.

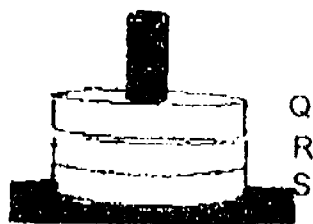
[1]

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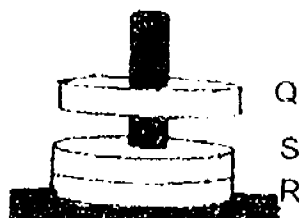


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- 32 (a) Kent placed 3 discs Q, R and S through a wooden rod, 2 of the discs are magnets and one is an iron disc as shown in Diagram 1.



He adjusted the positions of the 2 discs and observed the following in Diagram 2.



- (a) (i) Based on the information above, state which discs are magnets and which disc is the iron disc by writing the correct letters (Q, R and/or S) in the table below.

[1]

|                  | Disc |
|------------------|------|
| <b>Magnets</b>   |      |
| <b>Iron disc</b> |      |

- (ii) Explain why Disc Q float above Disc S.

[1]

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- (iii) Explain why Disc S did not float above Disc R.

[1]

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Question 32 (b) continues on page 2

- (b) Kent replaced the iron disc to a plastic disc. Will the result be the same or different from his observation in Diagram 2? Explain your answer [1]

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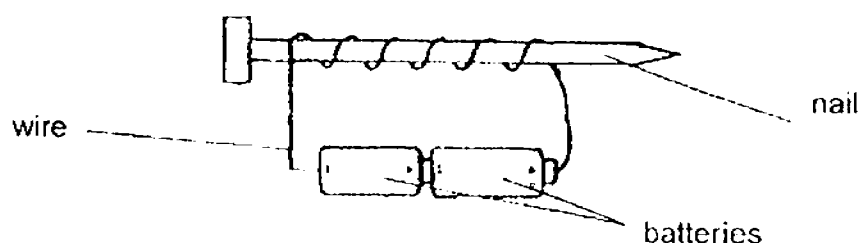


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- 33 (a) Max set up the following electromagnet using a nail, a wire and two batteries. He found that he was able to pick up some metal clips. He wanted to make it into a stronger electromagnet that can pick up more metal clips.



State 2 ways he can improve his set up so that he can pick up more metal clips. [2]

- (i) \_\_\_\_\_
- (ii) \_\_\_\_\_

- (b) Max changed the nail to a wooden rod and realised the rod could not pick up any metal clips. Give a reason why this is so. [1]

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END OF PAPER

**EXAM PAPER 2016**

**SCHOOL : PEI HWA PRESBYTERIAN PRIMARY SCHOOL**  
**SUBJECT : PRIMARY 4 SCIENCE**  
**TERM : SA1**

**BOOKLET A**

| Q1  | Q2  | Q3  | Q4  | Q5  | Q6  | Q7  | Q8  | Q9  | Q10 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   | 3   | 1   | 3   | 2   | 3   | 4   | 2   | 1   | 4   |
| Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | Q19 | Q20 |
| 2   | 4   | 3   | 1   | 4   | 1   | 3   | 3   | 2   | 4   |
| Q21 | Q22 |     |     |     |     |     |     |     |     |
| 1   | 1   |     |     |     |     |     |     |     |     |

**SECTION B:**

**Q23** The ticking clock on the wall does not reproduce but the chick in the garden reproduces. The ticking clock on the wall does not grow but the chick in the garden grows. That is why Mary disagreed with John, as the ticking clock on the wall was a non living thing while the chick in the garden was a living thing.

**Q24(a) (i) & (ii)**

| Property                   | Explain how the property makes the raincoat suitable                        |
|----------------------------|-----------------------------------------------------------------------------|
| Light/Lightweight/Flexible | Wearer to be comfortable/ Wearer can move about/could fit the wearer's body |
| Waterproof                 | Wearer to keep dry                                                          |

**Q24(b)** Transparent

**Q25(a)** It reproduces to ensure that their own kind will continue to live.

**Q25(b)** There are tiny openings on the leaf to give out and take in gases.

**Q25(c)** Flower would develop into fruits with seeds. The seeds then grow into new plants/ will help plants to reproduce.

**Q26(a)**

- (i) Egg
- (ii) Larva
- (iii) Pupa
- (iv) Adult

**Q26(b)** Adult stage/ stag 4. The adult mosquito bites/ drink blood/ feeds on blood.

**Q26(c)** (i) Change water in vases and bowls on alternate days.

(ii) Turn over all water storage containers.

OR Clear blockages and put insecticides in roof gutters monthly.  
Cover bamboo pole holders when not in use.

**Q27** R: Grasshopper

S: Frog/ Dragonfly

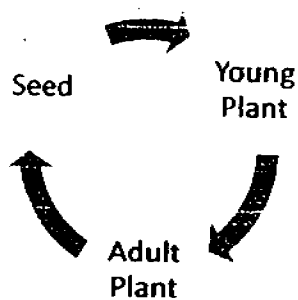
T: Butterfly

**Q28(a)**

- (i) leaf/leaves or true leaves/leaf
- (ii) From the seed leaf/leaves or cotyledon

**Q28(b)** It depends on the seed leaf for food

**Q28(c)**



**Q29(a)** Stage E

**Q29(b)** The plant at stage E has its own true leaves to make food by itself.

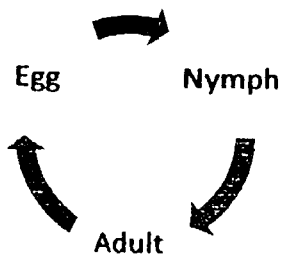
**Q29(c)**

- (i) Seed coat
- (ii) Protects the seed/baby plant/seed leaf

**Q30 (a)** It has become a pupa which neither feed nor moves

**Q30 (b)** 7 days

**Q30(c)**



**Q31(a)** P: South-seeking pole  
Q: North-seeking pole

**Q31(b)** Iron bar B was strokes with different directions and same pole.

**Q32(a)**

(i)

|           |         |
|-----------|---------|
|           | Disc    |
| Magnets   | Q and S |
| Iron disc | R       |

(ii) Like poles facing each other and they repel.

(iii) Disc R is a magnetic material and cannot repel a magnet.

**Q32(b)** The result will be the same because the plastic is (non-magnetic)/ not a magnet) it (cannot repel) or attract Disc S/ it will not have any reaction to Disc S.

**Q33(a)**

- (i) Increase the number of coils of wire around the nail
- (ii) Increase the number of batteries in the circuit.

**Q33(b)** Wood is a non-magnetic material which cannot be magnetised. Hence, the rod could not pick up any metal clips.